

Appl. No. 10/723,247
Amdt. dated November 20, 2007
Reply to Office Action mailed May 23, 2007

REMARKS

After the above amendments, Claims 46, 49-53, 81, 186, 194-199, 217-220, 246, 272-273 and 280-299 are pending.

Support for the amendments to Claims 46, 81 and 186 with respect to the degree of dephosphorylation may be found at, *e.g.*, page 7, lines 11-14, of the specification. As noted there, proteins and peptides which are “at least partially dephosphorylated” must have the number of phosphorylated amino acids present in the population of proteins or peptides reduced by at least 10%.

Support for new Claims 281, 287, 288 and 294 may be found at, *e.g.*, page 6, line 10, through page 7, line 20, of the specification.

A. Restriction Requirement

Applicant continues to disagree with the Examiner’s requirement for an Additional Election for the reasons of record. However, in order to advance prosecution, Applicant has amended the claims to limit them to the elected compound, phosvitin. These amendments are made without prejudice to pursuing the canceled claims and without prejudice to continuing to traverse this requirement, if it is made in future applications.

B. Section 112 Rejections

1. Written Description Rejection

The Examiner has rejected Claims 46-53, 62, 72, 74, 186-199, 210, 216-228, 239, 241, 245-254, 265, 267, 271 and 280 on the basis that the specification as originally filed does not provide support for the invention as now claimed. It is the Examiner’s position that the limitations in Claim 46 that the “pharmaceutical composition is not an aqueous solution or a lyophilized material” are not supported by the specification as originally filed. It is also the Examiner’s position that the limitation in Claim 186 that the pharmaceutical composition is “not an aqueous solution” is not supported by the specification as originally filed. Applicant respectfully traverses these rejections.

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The test for claim support under the first paragraph of Section 112 is whether the disclosure as originally filed reasonably conveys to the skilled artisan that the inventor had possession at that time of the later claimed subject matter. MPEP § 2163. An *ipsis verbis* disclosure is not necessary to satisfy the written description requirement. MPEP § 2163. Newly added claim limitations may be supported in the specification through express, implicit or inherent disclosure. MPEP § 2163.

Contrary to the Examiner's contentions, Applicant's specification quite clearly discloses and provides support for the limitation "wherein the pharmaceutical composition is not an aqueous solution." See page 22, line 26, through page 29, line 27, of the specification; in particular, see page 23, lines 9-15, page 24, line 26 through page 25, line 6, and page 28, lines 17-26, of the specification. This disclosure provides a description of pharmaceutical compositions which are aqueous solutions and pharmaceutical compositions which are not aqueous solutions. The Examiner is correct that the exact words "the pharmaceutical composition is not an aqueous solution" are not found in the specification, but such *ipsis verbis* disclosure is not necessary to satisfy the written description requirement. MPEP § 2163. In the present case, the specification clearly provides express, implicit and inherent disclosure which describes pharmaceutical compositions which are not aqueous solutions and which establishes that Applicant had possession of the invention of pharmaceutical compositions which are not aqueous solutions as of the filing date of the present application. Accordingly, Applicant submits that there is more than adequate support in the specification for this limitation and that this rejection should be withdrawn.

Applicant's specification also quite clearly discloses and provides support for the limitation "wherein the pharmaceutical composition is not a lyophilized material." See page 22, line 26, through page 29, line 27, of the specification; in particular, see page 23, line 9 through page 24, line 25, page 26, lines 5-9, page 28, lines 17-23, and page 29, lines 23-27, of the specification. This disclosure provides a description of pharmaceutical compositions which are

pharmaceutical compositions other than lyophilized materials. The Examiner is correct that the exact words “the pharmaceutical composition is not a lyophilized material” are not found in the specification, but such *ipsis verbis* disclosure is not necessary to satisfy the written description requirement. MPEP § 2163. In the present case, the specification clearly provides express, implicit and inherent disclosure which describes pharmaceutical compositions that are not lyophilized materials and which establishes that Applicant had possession of the invention of pharmaceutical compositions which are not lyophilized materials as of the filing date of the present application. Accordingly, Applicant submits that there is more than adequate support in the specification for this limitation and that this rejection should also be withdrawn.

2. Indefiniteness Rejections

The Examiner has rejected Claims 76 and 247-254 on the basis that they are indefinite. Applicant submits that the above amendments to the claims make these rejections moot.

The Examiner has also rejected Claims 272-279 on the basis that they are indefinite for the use of the expression “attached to.” Although targeting molecules can be noncovalently bound to the PAC (see page 16, lines 3-27), “attached to” in Claim 272 means covalent binding (see page 15, lines 21-22, and page 17, lines 16-19). The section of the specification referenced by the Examiner has nothing to do with targeting molecules. Accordingly, this rejection should be withdrawn.

D. Section 102 Rejections

1. Rejection of Claims 46-49, 62, 72, 74, 186, 192-194, 210, 217, 220-223, 239, 241, 246-249, 265 and 267 as anticipated by Wuelknitz et al.

The Examiner has rejected Claims 46-49, 62, 72, 74, 186, 192-194, 210, 217, 220-223, 239, 241, 246-249, 265 and 267 as anticipated by U.S. Patent No. 5,279,814 (Wuelknitz et al.). Applicant respectfully traverses this rejection.

First, Wuelknitz et al. is not a proper reference against these claims. Wuelknitz et al. teaches dental compositions. In the restriction requirement dated March 27, 2006, the Examiner required restriction between the pharmaceutical compositions of the rejected claims and claims

directed to oral care compositions. Accordingly, the Examiner has taken the position that the pharmaceutical compositions of the rejected claims are patentably distinct from oral care compositions, such as those taught by Wuelknitz et al., and therefore, Wuelknitz et al. is not a proper reference against the rejected claims. If the Examiner has changed his position, then Applicant requests that he be allowed to rejoin the claims directed to oral care compositions. If the Examiner has not changed his position, then this rejection should be withdrawn.

Second, even assuming that Wuelknitz et al. is a proper reference, Wuelknitz et al. does not anticipate the rejected claims. The Examiner contends that Wuelknitz et al. teach a dental composition comprising phosvitin which is inherently partially dephosphorylated. Contrary to the Examiner's contentions, the phosvitin used in the Wuelknitz et al. compositions is phosvitin as it is obtained from egg yolks without any dephosphorylation. Thus, Wuelknitz et al. alone does not anticipate the rejected claims.

The Examiner relies on Platt et al., *Eur. J. Biochem.*, **176**:61-67 (1988) (Platt et al.) as teaching that the phosvitin used in the Wuelknitz et al. compositions is inherently dephosphorylated. In particular, the Examiner contends that Platt et al. teaches that phosvitin as it is obtained from egg yolks is not fully phosphorylated (*i.e.*, it is partially dephosphorylated) and is, therefore, capable of acting as a phosphate acceptor.

Contrary to the Examiner's contentions, the teachings of Platt et al. do not establish that phosvitin as it is obtained from egg yolks is necessarily at least partially dephosphorylated.¹ Indeed, the phosvitin used in the experiments described in Platt et al. was dephosphorylated prior to use. See lines 5-16, especially lines 11-12, of the section entitled "Protein phosphorylation and dephosphorylation assays" on page 62 of Platt et al., which describes the dephosphorylation of phosvitin by acid hydrolysis. See also, Ahmed et al., *Biochimica et Biophysica Acta*, **377**:80-83

¹ By making these arguments, Applicant does not concede that Platt et al. is being properly used as a second reference in this section 102 rejection.

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(1975) (copy being submitted herewith) which teaches the need to dephosphorylate phosvitin prior to its use as a kinase substrate.

Thus, contrary to the Examiner's contentions, Platt et al. does not establish that the phosvitin used in the dental compositions of Wuelknitz et al. has the inherent characteristic of not being fully phosphorylated (*i.e.*, being partially dephosphorylated), as alleged by the Examiner, and Wuelknitz et al. does not anticipate any of the rejected claims for these additional reasons.

For all of the above reasons, this rejection should be withdrawn.

2. Rejection of Claims 46-49, 62, 72, 74, 186, 192-194, 210, 216-217, 219, 221-223, 239, 241, 246-249, 265 and 267 as anticipated by Nakamura et al.

The Examiner has rejected Claims 46-49, 62, 72, 74, 186, 192-194, 210, 217, 220-223, 239, 241, 245, 247-249, 265, 267 and 271-274 as anticipated by Nakamura et al., *J. Agric. Food Chem.*, **46**:3958-3963 (1998) (Nakamura et al.). Applicant respectfully traverses this rejection.

Nakamura et al. teaches phosvitin conjugated with galactomannan. However, the phosvitin used in the Nakamura et al. conjugates is phosvitin as it is obtained from egg yolks without any dephosphorylation. See paragraph bridging pages 3958-3959 of Nakamura et al. Thus, Nakamura et al. alone does not anticipate the rejected claims.

The Examiner provides no explanation as to why he believes that the phosvitin taught by Nakamura et al. is at least partially dephosphorylated. Thus, the Examiner has not established even a *prima facie* case of anticipation.

The Examiner contends that galactomannan is a targeting molecule, but it is not. A targeting molecule is one that targets a PAC to a cell, tissue or organ that is intended to be affected by the PAC. See page 15, lines 9-18, of the present application. Targeting molecules are not molecules which are intended to be recognized by an antibody or to assist with chelation of iron, as contended by the Examiner. The Examiner also contends that galactomannan would target the conjugate to a receptor, but provides no evidence that there is a receptor for galactomannan on any cell, tissue or organ.

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The Examiner contends that the phosvitin of Nakamura et al. is a kinase substrate. The Examiner relies on Platt et al. for support for this proposition.² The teachings of Platt et al. also do not establish that native phosvitin, as it is obtained from egg yolks, is a kinase substrate. As discussed above, the phosvitin used in the experiments described in Platt et al. had been dephosphorylated by acid hydrolysis prior to use.

For all the foregoing reasons this rejection should be withdrawn.

3. Rejection of Claim 81 as anticipated by Pierce

The Examiner has rejected Claim 81 as anticipated by Pierce, *Instructions for Gel Code® Phosphoprotein Staining Kit*, pages 1-3 (2001). Applicant respectfully traverses this rejection.

It is the Examiner's position that Pierce teaches a kit comprising a container holding phosvitin. However, the phosvitin in the Pierce kit is the positive control (see page 1 of Pierce) and, therefore, would not have been dephosphorylated (see Table 1, page 3 of Pierce).

The Examiner relies on Platt et al. to establish that phosvitin is at least partially dephosphorylated.³ As noted above, however, Platt et al. does not teach that phosvitin is at least partially dephosphorylated.

Accordingly, Pierce does not anticipate Claim 81, and the Examiner is requested to withdraw this rejection.

E. Section 103 Rejection

The Examiner has rejected Claims 46-49, 62, 72, 74, 186, 192-194, 210, 217-218, 220-223, 239, 241, 246-249, 265 and 267 as obvious over by U.S. Patent No. 5,279,814 (Wuelknitz et al.) in view of U.S. Patent No. 6,503,483 (Shuch et al.). Applicant respectfully traverses this rejection.

² By making these arguments, Applicant does not concede that Platt et al. is being properly used as a second reference in this section 102 rejection.

³ By making these arguments, Applicant does not concede that Platt et al. is being properly used as a second reference in this section 102 rejection.

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Wuelknitz et al. is discussed above. For the reasons discussed there, Wuelknitz et al. is not a proper reference against the rejected claims, and Wuelknitz et al. would not have taught or suggested pharmaceutical compositions comprising dephosphorylated phosvitin to those skilled in the art.

Like Wuelknitz et al., Shuch et al. is also not a proper reference against the rejected claims. Shuch et al. teaches oral care compositions and other oral care products. In the restriction requirement dated March 27, 2006, the Examiner required restriction between the pharmaceutical compositions of the rejected claims and claims directed to oral care compositions and oral care products. Accordingly, the Examiner has taken the position that the pharmaceutical compositions of the rejected claims are patentably distinct from oral care compositions and products, such as those taught by Shuch et al., and Shuch et al. is not a proper reference against the rejected claims. If the Examiner has changed his position, then Applicant requests that he be allowed to rejoin the claims directed to oral care compositions and oral care products. If the Examiner has not changed his position, then this rejection should be withdrawn.

CONCLUSION

Applicant believes that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

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